

Finding Solutions, Making Decisions

FOCUS

- Best Management Practices
- Deciding what approach to take
- Prioritizing the work

BMPs are the first line of defense for watershed projects.

Best Management Practices

The term “**Best Management Practice**” or “**BMP**” applies to structural and management practices used in agriculture, forestry, urban land development, and industry to reduce the potential for damage to natural resources from human activities.

– **Practice:** Method or customary way of doing something. In this context, a specific practice is recognized as having standards and specifications developed by an agency or institution with expertise in the relevant fields. A practice may be structural, something that is built or involves changes in land forms or equipment, or it may be managerial, a specific way of using or handling infrastructure or resources.

– **Management:** In this context, the way we do business or carry out work. Practices are incorporated into a management system. For instance, a logger implements riparian buffers and water bars to lessen the impact of timber harvesting on natural resources. The logger learns to *manage* his work differently.

– **Best:** In every field of work, there are several methods for reaching a goal. Based on impacts to natural resources, efficiency, economics, and the needs of the individual operation, technical assistance is provided to landowners and operators to select the practices best suited to all of their goals. Technical agencies and institutions work to develop new and innovative practices to meet the changing needs of industry and agriculture and to disseminate information concerning new practices.

It is not enough simply to present a laundry list of practices. A Best Management Practice must have been selected through a conscious planning process designed to inventory resources and needs, determine available alternatives, evaluate alternatives, make decisions, and follow up the selection of practices with monitoring and evaluation to determine whether they are having the desired effect.

Practices that can be used to address nonpoint source pollution are too numerous to list here.

The most authoritative sources of BMPs in Indiana are listed instead:

- **NRCS Field Office Technical Guide (FOTG).** A five-volume work found in every county SWCD office, containing standards and specifications for conservation practices, soils information for the county, planning considerations, conservation practice effects, and more. Adjuncts to the FOTG are the *Engineering Field Handbook*, which contains design methods for the practices described in the FOTG; the *National Agronomy Handbook*; the *Animal Waste Handbook*; and the *National Planning Procedures Handbook*.
- **Indiana Drainage Handbook.** Developed by a consortium of agencies and organizations, this manual contains practices for all aspects of agricultural and non-agricultural drainage activities. There is a copy in each SWCD county field office.
- **Indiana Erosion Control Handbook for Developing Areas.** Developed by IDNR and partner agencies, this resource contains practices for construction sites. There is a copy in each SWCD county office, and copies are available for \$25 from IDNR Division of Soils. It is currently being revised.
- **Logging and Forestry BMPs for Water Quality in Indiana.** Free, from the IDNR Division of Forestry. Contains practices for the timber industry and private woodlot owners.
- New technology emerges constantly. Check with technical assistance agencies, universities, and the Web for new practices. Have your technical committee investigate the value of these.
- CROPS, NAPRA, AGNPS, SWERBB, and other **computer models** that help sort options and predict the results of different alternatives that have been developed. Contact technical assistance agencies for more information.

In addition to practices aimed at nonpoint source pollution, the group may have concerns about **point sources**. Point sources have distinct discharge points such as municipal or industrial discharge pipes. These concerns can be taken up with the responsible agency, which in most cases is the Indiana Department of Environmental Management. Changing the amount or nature of point source discharges may be beyond the group's scope, but some alternatives might include getting involved in the public hearing process for new permits, requesting compliance information, or working with local industry to promote more effective technology.

The group may want to change **land use** trends in the watershed; for example, encourage cluster housing in new subdivisions, promote regional storm water management, advocate rezoning in certain environmentally sensitive areas, or divert planned transportation corridors. In each case ask the following:

- What is the activity that is causing concern?
- What is it about this activity that raises concern?
- What would the group want to change?
- Is it practical for the group to take on this particular issue, or is there a partner who could carry out the effort?
- Is there an existing effort to address this concern that the group could support?
- Who is responsible for the activity? Who are the contact persons?

With the aid of technical agencies and individuals, the group should *brainstorm every possible alternative for addressing concerns and bringing about desired changes*, no matter how far out some of them may sound. This is not the time to judge the merits of solutions. Just try to get them all on the table.

Deciding what approach to take

Once the group has listed every conceivable method for reaching its goals, it's time to analyze the alternatives and decide which approaches or strategies best fit the situation. You may need to make clear to yourselves or to others why one approach is preferred over another. There are a number of questions you can ask to help at this stage:

- Does this approach address our primary concerns?
- Will it help us meet our goals?
- What would be the effects on the environment?
- Can we measure the effects?
- How long would it take to see results?
- What would this approach cost in terms of money and manpower?
- Do we have (or can we get) the technical expertise to do this?
- Would this approach be acceptable to the people in this watershed?
- Would this approach complement other projects that we already plan to do?

Prioritizing watershed work

When the group has decided which methods it will utilize to address problems, there may be more work on the table than it is reasonable to attempt. In this case you will need to determine which areas will receive priority treatment. It's a good time to bring out any maps developed during the inventory phase, list the problems and favored solutions, and ask these questions:

- **Can we fix it?** If a problem is beyond the scope of the group, such as cleaning up a Superfund site or bringing back the passenger pigeon, table it. If it is doable, but not by this group, refer it to the appropriate party.
- **Is somebody willing to do it?** If the "fix" involves land use changes or management changes that are not presently acceptable to the community, or if the residents are just not concerned or committed on some issue, consider postponing that problem until a later date. Instead, work first to develop a track record of successes to increase your profile in the community, and/or wait until you have more resources.
- **Will it help us meet our targets?** If the problem and solution are manageable, but they don't relate to your mission and goals, consider finding another home for them.
- **Will the resources stretch that far?** If you expect to receive a \$100,000 grant and installing this practice in the entire watershed will take \$500,000, narrow the focus of that particular project.
- If the answer to all these questions is "yes," go for it!

Go to the next prioritization step when you have filtered the selected problems and solutions through the above questions and there is still too much work on the table, try the following steps:

Lay out your maps and divide the watershed into smaller sections. (You may have done this during the inventory phase). Decide what parameters make sense for ranking these **sub-watersheds**. For instance, if fish habitat is a primary concern, parameters could include dissolved oxygen, a habitat index expressing the condition of the stream bottom and streambank vegetation, and a measure of the food supply for fish (macroinvertebrate index).

Placing important pollution sources on a watershed map, linked with water-quality data and land uses, can help you target areas in the watershed for your activities. If a GIS system is not available, mylar overlay maps can be used as simple analysis tools.

If the data does not exist to rank the sub-watersheds, the group can return to the inventory phase in order to gather the information it needs, or choose another set of characteristics to rank the watersheds. For instance, you could look at land use changes, livestock numbers, agricultural practices or housing starts to gauge the vulnerability of each sub-watershed to pollution.

When the sections or sub-watersheds have been ranked, pick one or two areas in which to begin. Starting small has many advantages. You could call this area a “pilot” or “start-up” project. Use this first small project to assess how you will do more work in the future and build on your successes.